NOAA, NATIONAL WEATHER SERVICE, WEATHER FORECAST OFFICE

Miami, Florida 33165

…July Brought More Typical Precipitation To South Florida…

...Rainy Season Halfway Progress Report...

After a very wet May and June over most of south Florida, the precipitation observed during July was more "normal" in nature. Most areas received July rainfall amounts that were within 1 to 2 inches of normal, with the exception of locations near and around Lake Okeechobee which had significantly above normal rain amounts; coastal sections of Collier County which were received well below normal rainfall and portions of the central and southern Everglades which were also several inches below normal (Figure 1).

The overall weather patterns during July changed little from what we've seen so far this wet season, but with some subtle but important changes. As noted so far this wet season, the middle and upper levels of the atmosphere were dominated by a low pressure trough over the southeast United States extending to parts of the Florida peninsula. This type of pattern provides general atmospheric instability which is conducive for thunderstorm development. In the lower levels of the atmosphere, the mean July pattern was a high pressure ridge right over the southern Florida peninsula (Figure 2). This ridge position was farther north than during much of the early part of the rainy season when the mean ridge position was south of Florida. This slight northward shift in the high pressure ridge supported a lighter surface and low level wind flow, allowing for afternoon sea breezes to dominate and to penetrate farther inland from both coasts. The resulting effect is for higher precipitation over inland areas where the sea breezes collide, with varying rainfall amounts closer to the coasts.

Several inland locations measured over 10 inches of rain for the month of July, including Clewiston (14.29 inches) and LaBelle (12.78 inches). These rains have contributed to the continued rise in the Lake Okeechobee level which surpassed 13.5 feet in July (Figure 3). A few locations in metro southeast Florida also received over 10 inches, including Hialeah (11.36 inches) and Fort Lauderdale Dixie Water Plant (10.31 inches).

By contrast, western Collier and Mainland Monroe counties remained drier than normal in July. Some of these locations were quite dry for July such as Marco Island (2.63 inches) and Naples Regional Airport (3.18 inches). A possible explanation for this area receiving less rain than the rest of south Florida is the

westerly wind pattern which has prevailed so far this wet season. A westerly wind flow tends to keep most of the daily thunderstorm activity inland and away from areas near the immediate coast. As a result, western Collier and mainland Monroe counties have been placed in an abnormally dry status by the U.S. Drought Monitor. In fact, Naples' year-to-date total of 10.84 inches as of July 31st ranks as the driest January to July period on record.

Below are July rainfall totals and departure from normal in inches for select south Florida locations:

Location	July 2009 Rainfall	July Departure From Normal
Miami Int'l	6.17	0.38
Fort Lauderdale Int'l	5.48	-1.22
Palm Beach Int'l	3.95	-2.02
Naples Regional	3.18	-4.80
Miami Beach	5.94	2.31
Moore Haven	9.93	3.26
Labelle	12.78	5.09
The Redland (Perrine)	6.68	0.93
Oasis Ranger Station	8.71	1.28

About midway through the South Florida wet season, most areas have been wetter than normal since the start of the wet season on May 11th. Areas along and near the immediate southwest Florida coast are significantly drier than normal. Isolated pockets of the southeast Florida metro area are at near to slightly below normal rainfall totals for the season thus far.

Below are 2009 Wet Season rainfall totals and departure from normal in inches for select locations:

Location	Wet Season 2009 Rainfall thru 7/31	Wet Season 2009 Departure From Normal thru 7/31
Miami Int'l	25.34	7.27
Fort Lauderdale Int'l	20.14	-0.86
Palm Beach Int'l	28.29	11.09
Naples Regional	9.46	-9.55
Miami Beach	31.77	17.76
Moore Haven	31.12	14.96
The Redland (Perrine)	25.46	4.04
Oasis Ranger Station	22.35	0.62

The precipitation outlook from the Climate Prediction Center for the remainder of the wet season which typically lasts into October is for an increased likelihood of above normal rainfall over south Florida. This forecast is generally supported by late summer/early fall trends observed during previous El Niño events. For more information on rainfall totals and water conditions across south Florida, please visit the National Weather Service Miami-South Florida Forecast Office's hydrologic page at http://www.srh.noaa.gov/mfl/?n=drought_info.

For the latest weather conditions, forecasts, warnings, advisories and statements, please visit the National Weather Service Miami-South Florida Forecast Office's web site at http://www.weather.gov/southflorida.

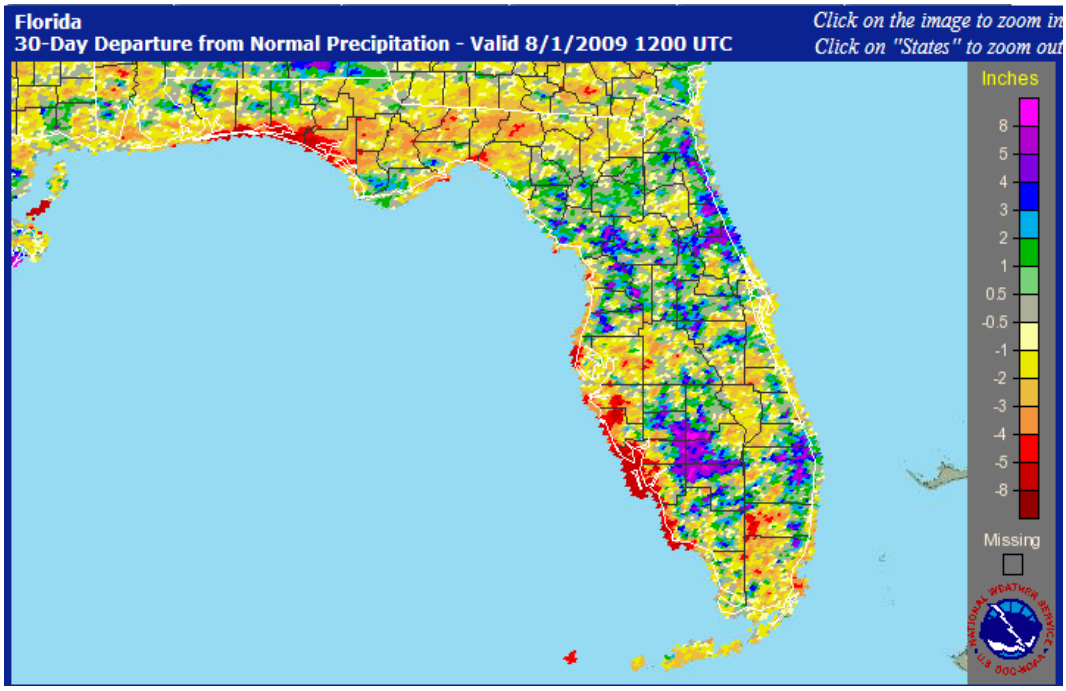

Figure 1: July 2009 Precipitation Departure From Normal (green/blue/purple areas are above normal, yellow/orange/red areas are below normal).

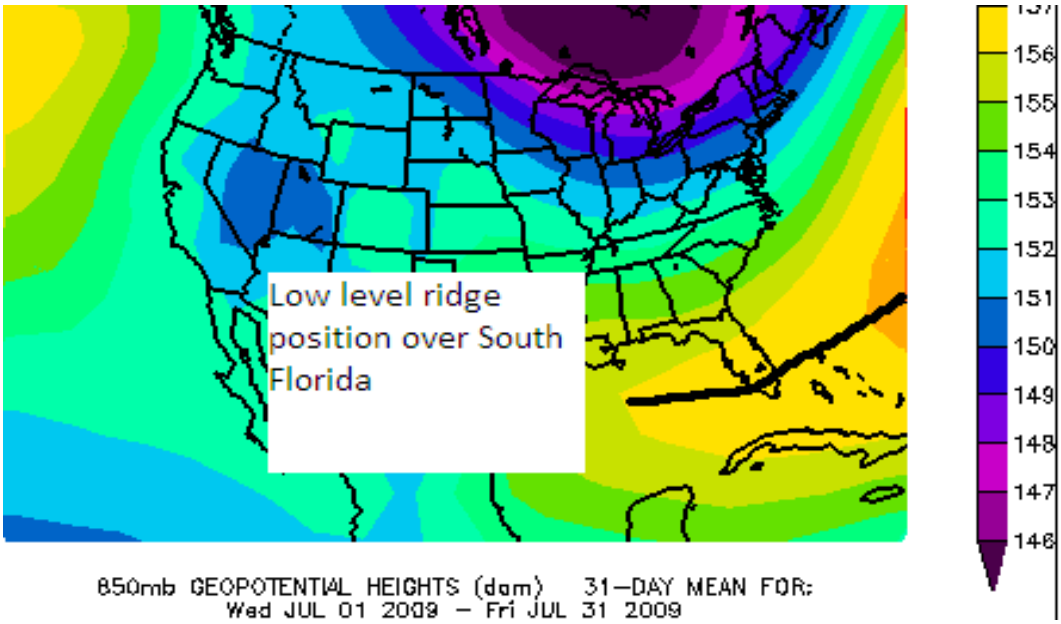

Figure 2: Mean 850 MB Heights – July 2009

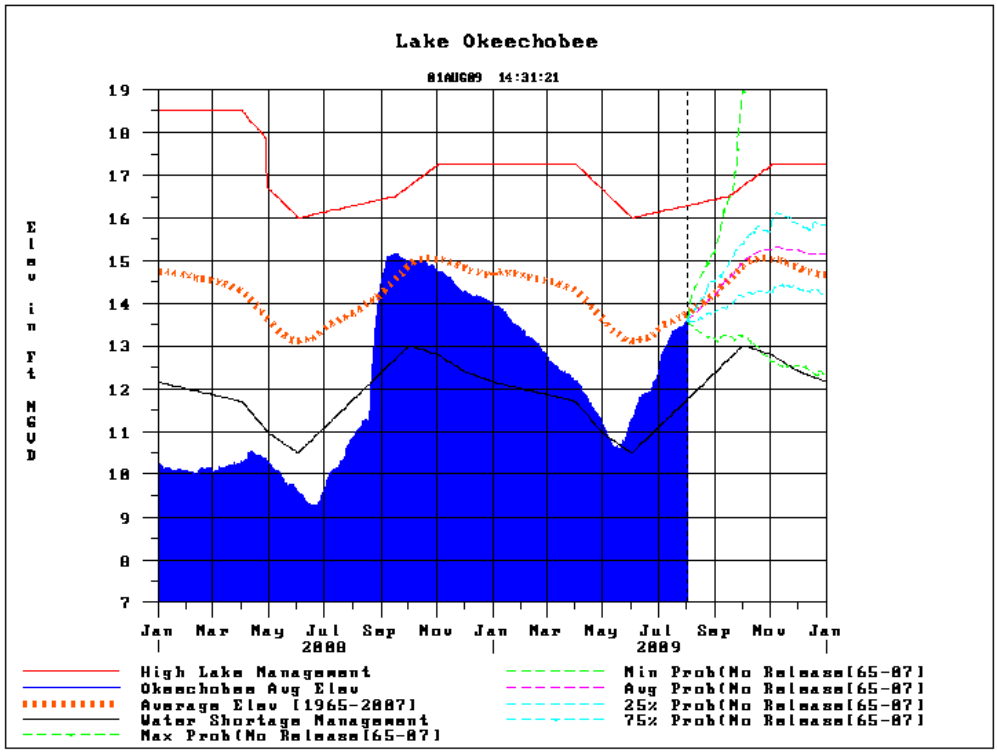

Figure 3: Lake Okeechobee Lake Level Jan 2008 through July 2009 (courtesy of U.S. Army Corps of Engineers).